

# Algebra 1

## Reference Sheet

(To be used with Section 3)

### Exponent Rules

$$x^a \cdot x^b = x^{a+b}$$

$$(x^a)^b = x^{a \cdot b}$$

$$\frac{x^a}{x^b} = x^{a-b}$$

$$x^{-a} = \frac{1}{x^a}$$

$$x^0 = 1$$

$$x^1 = x$$

### Linear Formulas

#### Slope

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

#### Slope-Intercept Form

$$y = mx + b$$

#### Point-Slope Form

$$y - y_1 = m(x - x_1)$$

#### Standard Form

$$Ax + By = C$$

### Special Cases of Multiplying/Factoring Polynomials

$$\begin{aligned} a(b + c) &= ab + ac \\ (a + b)^2 &= a^2 + 2ab + b^2 \\ (a - b)^2 &= a^2 - 2ab + b^2 \\ (a + b)(a - b) &= a^2 - b^2 \end{aligned}$$

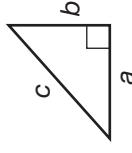
### Quadratic Equation

#### Standard Form

$$ax^2 + bx + c = 0$$

### Pythagorean Theorem

$$a^2 + b^2 = c^2$$



# Álgebra 1

## Hoja de Referencia

(Para uso con la sección 3)

### Reglas de Exponentes

$$x^a \cdot x^b = x^{a+b}$$

$$(x^a)^b = x^{a \cdot b}$$

$$\frac{x^a}{x^b} = x^{a-b}$$

$$x^{-a} = \frac{1}{x^a}$$

$$x^0 = 1$$

$$x^1 = x$$

### Fórmulas Lineales

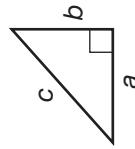
**Pendiente**  
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

**Forma pendiente-ordenada de una recta en pendiente**  
$$y = mx + b$$
**Forma punto-pendiente de una recta**  
$$y - y_1 = m(x - x_1)$$
**Forma Estándar**  
$$Ax + By = C$$

$$ax^2 + bx + c = 0$$

### Teorema de Pitágoras

$$a^2 + b^2 = c^2$$



### Casos Especiales de Multiplicar o Factorear Polinomios

$$\begin{aligned}a(b+c) &= ab+ac \\(a+b)^2 &= a^2+2ab+b^2 \\(a-b)^2 &= a^2-2ab+b^2 \\(a+b)(a-b) &= a^2-b^2\end{aligned}$$

**Ecuación Cuadrática, Forma Estándar**